

ABSTRACT

A method of fabricating a fluid ejection device includes the step of forming a plurality of micro-electromechanical fluid ejection devices on a substrate that incorporates drive circuitry such that each device includes a micro-electromechanical actuator that is in electrical contact with the drive circuitry and a fluid ejection member that is positioned on the actuator. A plurality of nozzle chamber walls are formed on the substrate to define nozzle chambers such that each fluid ejection member is operatively positioned with respect to a respective nozzle chamber to eject fluid from the nozzle chamber on receipt of an electrical signal from the drive circuitry by the micro-electromechanical actuator to displace the fluid ejection member. A layer of sacrificial material is deposited on the substrate to cover the nozzle chamber walls. The layer of sacrificial material is etched to define deposition zones for a structural material layer that is to define roof walls of the nozzle chambers and nozzle rims extending from the roof walls to define ink ejection ports in fluid communication with respective nozzle chambers. The layer of structural material is deposited on the etched layer of sacrificial material to cover the layer of sacrificial material thereby defining the roof walls, the nozzle rims and closing the ink ejection ports, such that the layer of structural material is conformal to the layer of sacrificial material. The layer of structural material is planarized to open the ink ejection ports. The sacrificial material is removed.

Figure 11